IN THE CLAIMS:

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 4 and 5 without prejudice or disclaimer, and AMEND claims 1, 3, and 6 in accordance with the following:

1. (currently amended) A copper-nickel-silicon quench surface of a thermally conducting alloy for rapid solidification of molten alloy into strip, having a two-phase microstructure with cells of copper rich regions surrounded intimately by a discontinuous network of nickel silicide and chromium silicide phases, said cells having a maximum cell size of greater than 1 μm and less than 250 μm ~~in an aspect ratio of about 1~~with a cell size uniform in all directions,

wherein said thermally conducting alloy is a copper-nickel silicon alloy consisting essentially of about 6-8 wt % nickel, about 1-2 wt % silicon, about 0.3-0.8 wt % chromium, the balance being copper and incidental impurities.

2. (cancelled)

3. (currently amended) A quench ~~substrate~~ surface as recited in claim 1, wherein said thermally conducting alloy is a copper-nickel silicon alloy consisting essentially of about 7 wt % nickel, about 1.6 wt % silicon, about 0.4 wt % chromium, the balance being copper and incidental impurities.

4. (canceled)

5. (canceled)

6. (currently amended) A process for forming a quench casting wheel substrate comprising:

casting a copper-nickel-silicon alloy billet having a composition consisting essentially of about 6-8 wt % nickel, about 1-2 wt % silicon, about 0.3-0.8 wt % chromium, the balance being copper and incidental impurities;

mechanically working said billet to form a quench casting wheel surface said mechanical working being carried out at a temperature ranging from about 760 to 955 °C; and

heat treating said surface to obtain a two-phase microstructure, said heat treating being carried out at a temperature ranging from about 440 to 955 °C, wherein the two-phase microstructure has cells of copper rich regions surrounded intimately by a discontinuous network of nickel silicide and chromium silicide phases,

wherein said cells have a maximum size of greater than 1 μm and less than 250 μm ~~in an aspect ratio of about 1~~ with a cell size uniform in all directions.

7. (previously presented) A process as recited by claim 6, wherein said mechanical working includes extruding said billet to break down the residual silicide structure that forms during solidification of the cast ingot and to create sufficient strain to induce nucleation and grain growth uniformly through the entire part.

8. (previously presented) A process as recited by claim 6, wherein said mechanical working includes ring rolling said billet to break down the residual silicide structure that forms during solidification of the cast ingot and to create sufficient strain to induce nucleation and grain growth uniformly through the entire part.

9. (previously presented) A process as recited by claim 6, wherein said mechanical working includes saddle forging said billet to break down the residual silicide structure that forms during solidification of the cast ingot and to create sufficient strain to induce nucleation and grain growth uniformly through the entire part.

10. (previously presented) A process as recited in claim 6, wherein the mechanical working produces mechanical strain equivalent to a reduction in area ranging from at least about 7:1 to 30:1.

11. (previously presented) A process as recited in claim 6, wherein said heat treating is a two-stage process wherein a first stage is a heat treatment for a time from about 1 to 8 hours at a temperature from about 955 to 995 °C, and a second stage is a heat treatment to nucleate and grow the silicide phases for a time of about 1 to 5 hours at a temperature of about 440 to 495 °C.